On-Vehicle Adjustments

ENGINE MECHANICAL

Before performing any on-vehicle adjustments to fuel or ignition systems, ensure engine mechanical condition is okay.

VALVE CLEARANCE

NOTE: All models use hydraulic lifters. No adjustment is required.

IGNITION TIMING

NOTE: Ignition timing is not adjustable. Ignition timing can be checked on Cabrio (2.0L ABA) & EuroVan (2.8L AES) models only. No ignition timing specifications are available from manufacturer for all other models. To check ignition timing use of Scan Tool (VAG 1551/1552) with adapter cable (VAG 1551/3) is recommended. Ignition timing should be checked with engine at operating temperature.

IGNITION TIMING CHECKING

Cabrio (2.0L ABA)

Specification (0 to 5 degrees BTDC) in Display Field "3" on scan tool with engine at 800-880 RPM. Display Field "4" should display a maximum of plus or minus 2 degrees from reading in Display Field "3" at 800-880 RPM. Specification for timing advance is not available from manufacturer.

EuroVan (2.8L AES)

Specification (11 to 13 degrees BTDC) in Display in Field "3" on scan tool with engine at 650-750 RPM. Display Field "4" should display a maximum of plus or minus 2 degrees from reading in Display Field "3" at 650-750 RPM.

Checking ignition timing advance. Specification (0 to 50 degrees BTDC) in Display Field "3" with engine at 650-6000 RPM and (0 to 40) degrees in Display Field "4".

IDLE SPEED & MIXTURE

NOTE: Idle speed & mixture is computer controlled and is not adjustable. Ensure fuel system pressure is correct. If idle speed and/or air mixture is incorrect, check for vacuum leaks.

THROTTLE CABLE

THROTTLE CABLE ADJUSTMENT (A/T)

Beetle, Golf, GTI & Jetta (2.0L AEG), Cabrio & EuroVan (2.8L AES)

Remove retaining clip from throttle cable at throttle body support bracket. Depress accelerator pedal to pedal stop. Adjust cable for wide open throttle at throttle body. Ensure that kickdown switch is activated .39-.59" (10-15 mm) before accelerator pedal stop (audible click and zero ohms at kickdown switch). See **Fig. 1** or **Fig. 2** . Reinstall retaining clip and check adjustment.

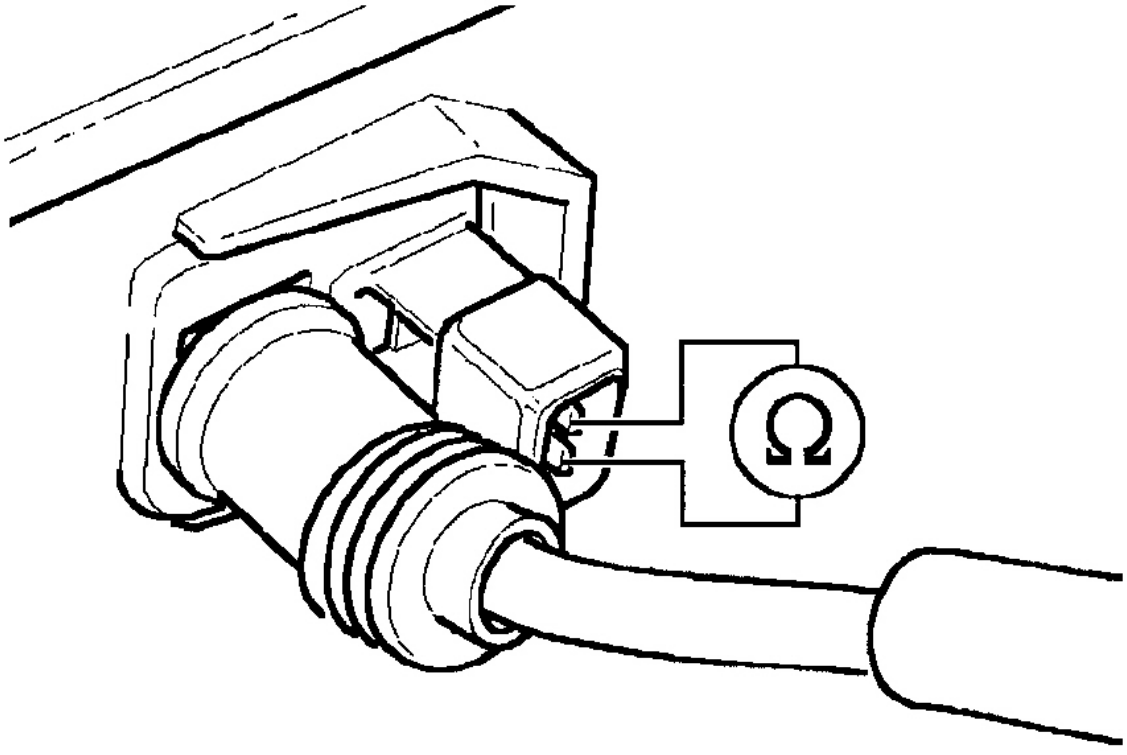

Fig. 1: Throttle Cable Kickdown Switch Test Points (Beetle, Golf, GTI & Jetta - 2.0L AEG)
Courtesy of VOLKSWAGEN UNITED STATES, INC.

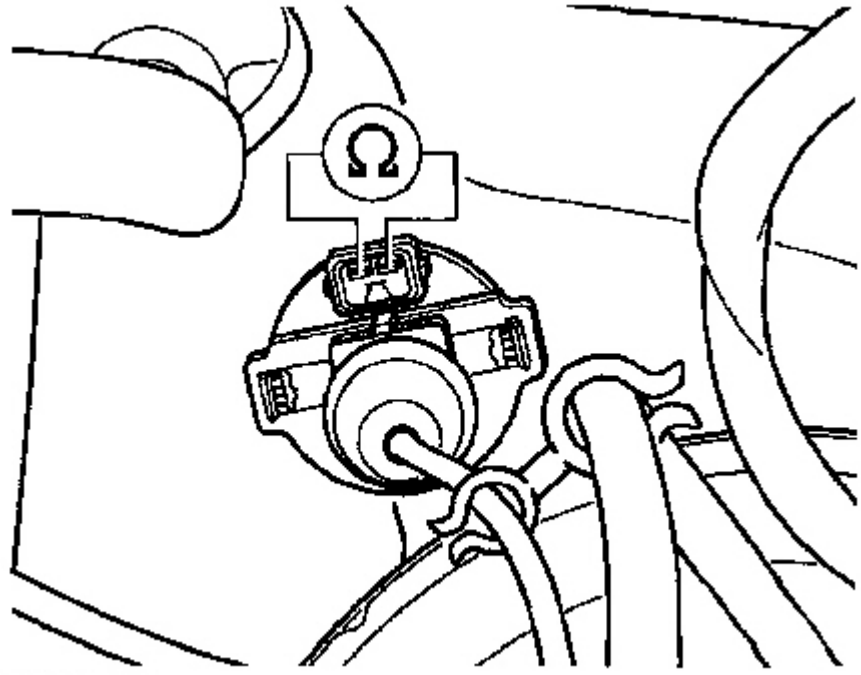

Fig. 2: Throttle Cable Kickdown Switch Test Points (Cabrio & EuroVan - 2.8L AES)
Courtesy of VOLKSWAGEN UNITED STATES, INC.

THROTTLE CABLE ADJUSTMENT (M/T)

Beetle, Golf, GTI & Jetta (2.0L AEG), Cabrio & EuroVan (2.8L AES)

Remove retaining clip from throttle cable at throttle body support bracket. See **Fig. 3** . Depress accelerator pedal to pedal stop. Adjust cable for wide open throttle at throttle body, reinstall retaining clip and check adjustment.

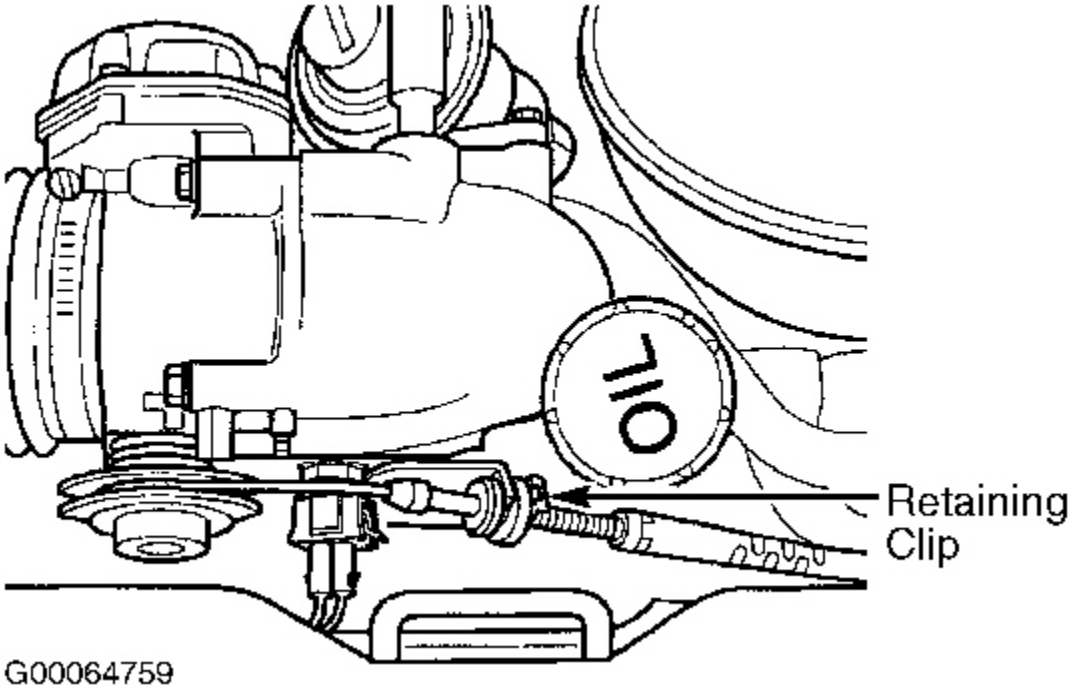

Fig. 3: Adjusting Throttle Cable (Beetle, Golf, GTI & Jetta - 2.0L AEG, Cabrio & EuroVan - 2.8L AES)
Courtesy of VOLKSWAGEN UNITED STATES, INC.

THROTTLE POSITION (TP) SENSOR

THROTTLE POSITION (TP) SENSOR ADJUSTMENT (1.9L TURBO DIESEL)

NOTE: Beetle, Golf and Jetta 1.9L turbo diesels are the only vehicles that have an adjustable TP sensor. All other vehicles do not have an adjustable TP sensor.

1.9L Turbo Diesel

NOTE: TP sensor is located in accelerator pedal housing (inside vehicle).

1. To adjust cable cam, unplug and remove accelerator pedal sensor (TP sensor). Install cable disc as shown in **Fig. 5** . Install accelerator pedal sensor with preassembled cable cam. Reconnect TP sensor.
2. After adjusting TP sensor, check TP sensor function. With engine off, push accelerator pedal down by hand to ensure that wide open throttle position is reached and kickdown switch is felt. If kickdown switch is not felt or pedal does not reach the pedal stop, adjust sensor by turning in bracket slots. See **Fig. 4** .
3. Connect Scan Tool (VAG 1551/1552) to Data Link Connector (DLC). DLC is located under dashboard, left of steering column, or in center console. Turn ignition on with engine off. Press "0" and "1" buttons to select Address Word "01" Engine Electronics, press arrow button on scan tool, display should read, Rapid Data Transfer.
4. Press "0" and "8" buttons to select Function "08". Read Measuring Value Block will display. Press "Q" button to enter input. Press "0", "0" and "2" buttons to select Display Field "2". Press "Q" button to enter input. Observe value in Display Field "2" (Throttle Position). Specification should be zero percent (pedal

not depressed).

5. While observing Display Field "2", slowly open throttle to Wide Open Throttle (WOT). Display should increase uniformly from zero percent at closed throttle to 100 percent at wide open throttle.
6. If display are correct, press right arrow button. Press "0" and "6" to select ENDING OUTPUT function. Press "Q" button to enter input. If display is incorrect, readjust TP sensor. Retest TP sensor. If readings are not corrected by adjustment, check TP sensor circuit, replace as necessary.

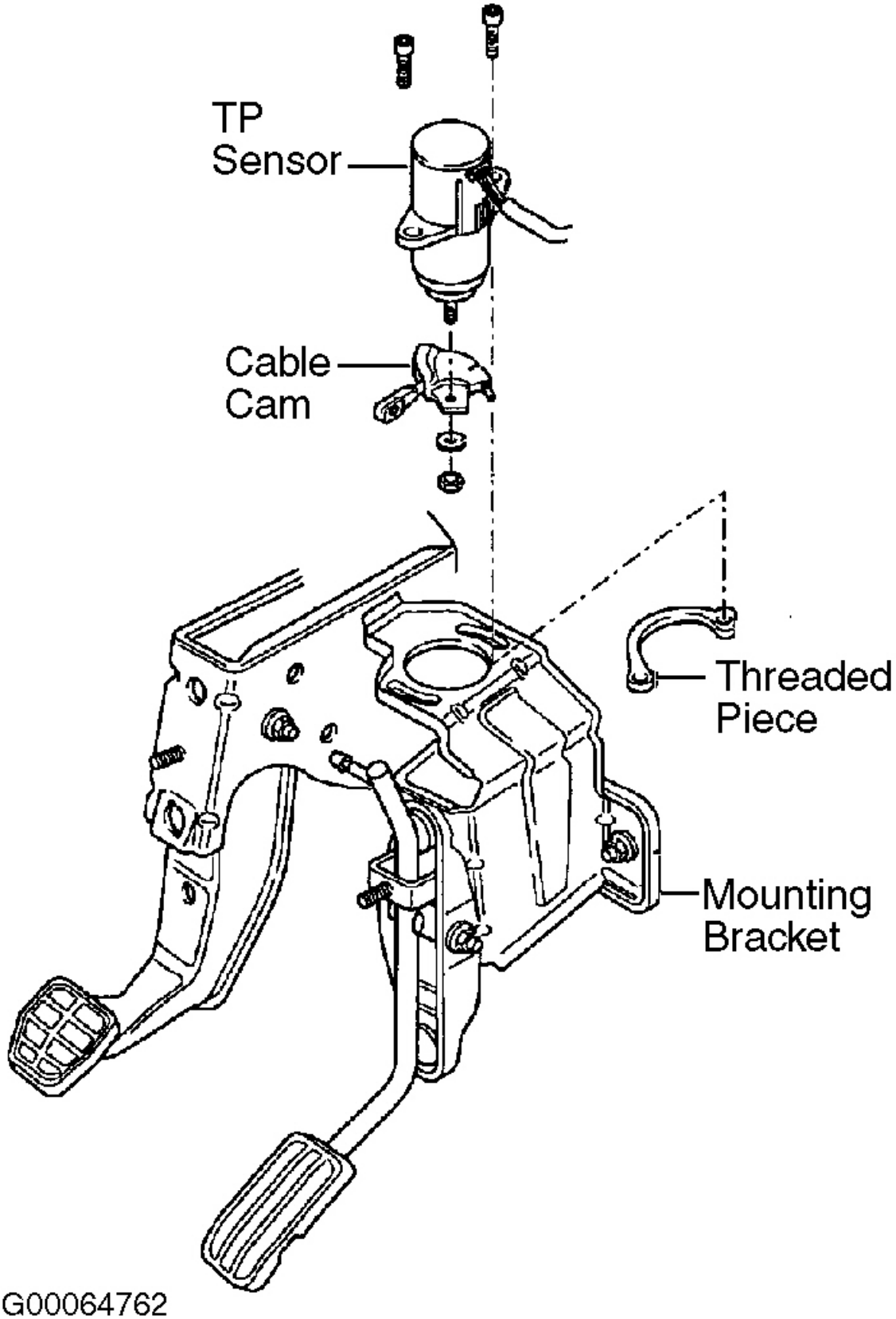

Fig. 4: Identifying TP Sensor Components (1.9L Turbo Diesel)

Courtesy of VOLKSWAGEN UNITED STATES, INC.

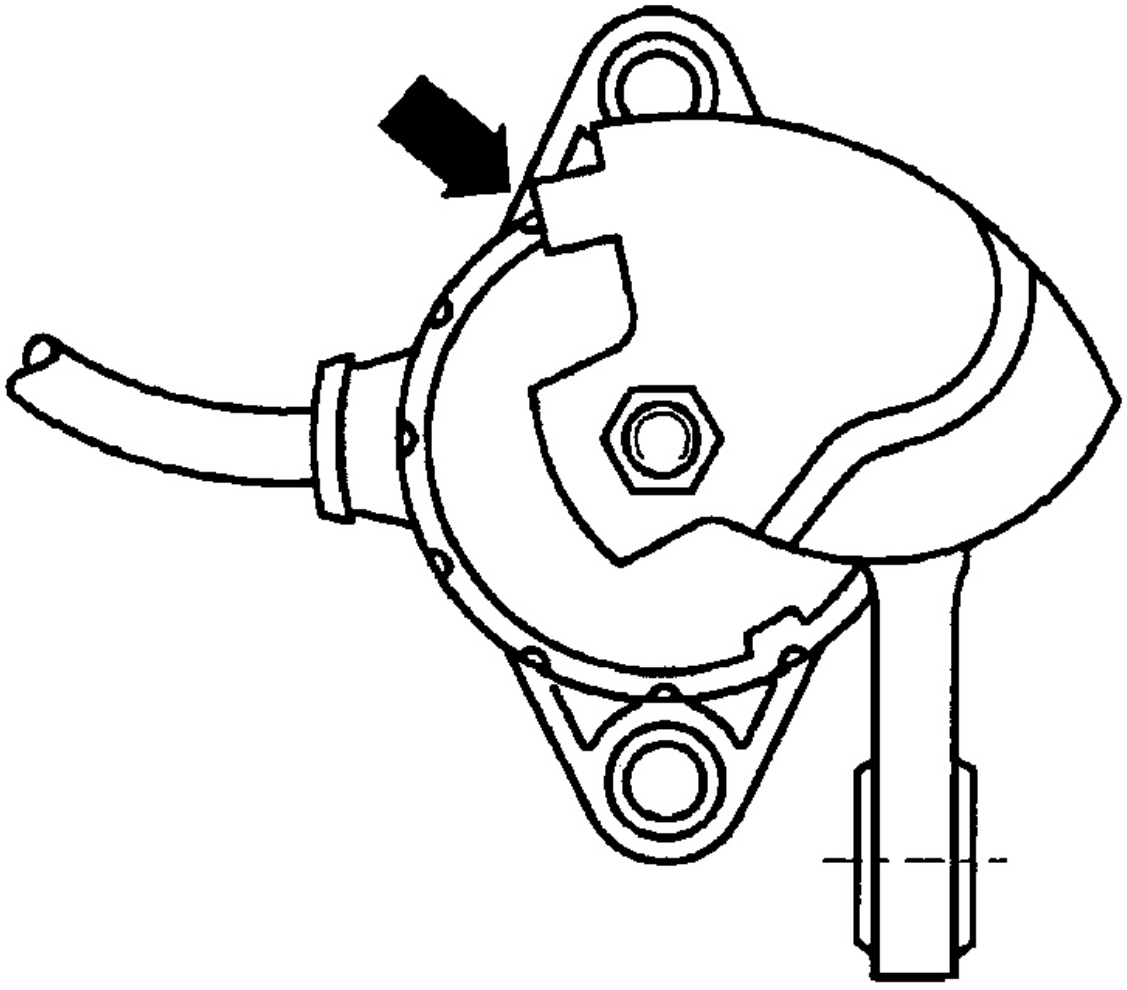

Fig. 5: Adjusting Cable Cam (TP Sensor Adjustment - 1.9L Turbo Diesel)
Courtesy of VOLKSWAGEN UNITED STATES, INC.